**BUKOMANSIMBI SECONDARY SCHOOL**

**END OF TERM III EXAMS 2023**

**S.3 MATHEMATICS**

**TIME: 2 HOURS**

**SECTION A: (40 MARKS)**

***Answer all questions.***

1. Given that 1 USD = UGX. 3,718. Copy and complete the table below (4 marks)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| USD | 5 | 10 | 15 | 20 | 25 |
| UGX. | 18,590 | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ |

1. Study the speed-time graph below and use it to answer the questions that follow.

20

A

15 C D

**Speed (m/s)**

10

15

0 4 8 10 12 16 20 24

Time (s)

Find;

1. Time when speed is 15m/s
2. The speed when t=4s
3. Distance when t=10s (4 marks)
4. Simplify the following;
5. (4 marks)
6. Solve the inequality. Hence illustrate it on a number line. (4 marks)
7. Aisha said that the area of the triangle below is while Peter says it is . If , who of them is right? (4 marks)

1. The volume of a water tank is 4000cm³. If the dimensions of the tank are doubled, what is the volume of the new water tank? (4 marks)

|  |  |  |
| --- | --- | --- |
| Number | Expanded form | Simplified form |
|  |  |  |
|  | \_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_ |
|  | \_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_ |

Copy and complete the table above (4 marks)

1. Study the diagram below

Ladder

Wall

7m

θ

4m ground

1. Move the foot of the ladder to be;
2. 3m (ii) 2m

From the wall and let the ladder continue leaning against the wall, sketch the new positions of the ladder. (3 marks)

1. What happens to the angle between the ground and the ladder as the foot of the ladder moves nearer to the wall? (1 mark)
2. Draw the graph of . (4 marks)
3. From a point on a level ground 27 metres from the base of a building, the angle of elevation to the top of the building is 37.8º. Workout the height of the building. (4 marks)

**SECTION B (30 MARKS)**

***Answer all the questions in this section. All questions carry equal marks.***

1. The ages of people in years who attended a birthday party are shown below;

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 30 | 22 | 38 | 25 | 41 | 37 | 33 | 40 |
| 39 | 38 | 51 | 32 | 48 | 34 | 43 | 24 |
| 25 | 31 | 37 | 43 | 23 | 46 | 36 | 47 |
| 39 | 44 | 26 | 36 | 37 | 41 | 29 | 32 |
| 40 | 38 | 42 | 31 | 49 | 28 | 54 | 35 |

1. Draw a frequency distribution table for the data starting with 20 – 24. (4 marks)
2. State the modal class. (1 mark)
3. Calculate the mean age. (2 marks)
4. Calculate also the median age (3 marks)
5. (a) From the top of a tower of height 78m, a guard sees two people both due east of him. If the angles of depression of the people are 12º and 19º, calculate the distance between them. (6 marks)

(b) A ship has steamed 80km on a bearing of 148º. Calculate how far she has gone to the east of her starting point.

1. Andrew is planning a party for the senior three class, of the 285 students in his class, two thirds confirm they will attend.

He wants to determine the cost of the party. He plans to rent a meeting room at a convention centre at Ugx. 400,000. There will be an additional fee of Ugx. 5,500 for each person who attends the party.

Task: Help Andrew to plan and budget for the party. (10 marks)

~END~

*\* Happy New Year\**